

WHAT IS CLAIMED IS:

1. A process for producing a dust mite allergen comprising the steps of:

5 (a) constructing a vector for plant transformation that comprises a DNA sequence encoding the dust mite allergen operably linked to a plant-specific promoter;

(b) transforming a plant cell or tissue with the vector of step (a); and

10 (c) obtaining the dust mite allergen from the plant cell or tissue of step (b).

2. The process of Claim 1, wherein the dust mite allergen is selected from the group consisting of Der p 5 and Der p 2 allergens.

3. The process of Claim 1, wherein the dust mite allergen is Der p 5 allergen.

15 4. The process of Claim 1, wherein the dust mite further comprises an endoplasmic reticulum (ER) retention signal peptide.

5. The process of Claim 1, wherein the vector is modified plant virus vector.

20 6. The process of Claim 5, wherein the vector is selected from the group consisting of Zucchini yellow mosaic virus (ZYMV) and Tobacco mosaic virus (TMV).

7. The process of Claim 1, wherein the plant-specific promoter is cauliflower mosaic virus 35S promoter.

25 8. The process of Claim 1, wherein the vector further comprises a selectable marker gene.

9. The process of Claim 1, wherein at least one portion of the plant is edible.

10. The process of Claim 1, wherein the plant is selected from the group consisting of tobacco, potato and zucchini squash, tomato, lettuce, 5 white rape, banana, rice, radish, carrot, apple, soybean, corn, and berries.

11. The process of Claim 10, wherein the plant is selected from the group consisting of Kennebec variety of potato, *Nicotina benthamiana* and *Cucurbia pepo* L. var. Zucchini.

12. The process of Claim 1, wherein the plant cell or tissue is 10 transformed in step (b) by Agrobacterium-mediated gene transferring, direct DNA uptaking or plant virus infecting step.

13. The process of Claim 1 further comprising a step of regenerating a transgenic plant from the plant cell or tissue of step (b) before step (c).

15 14. The process of Claim 1, wherein the dust mite allergen is provided in the form of the transgenic plant itself, a part of the plant, fruit, leaves, stems, tubers, seed or extract thereof.

20 15. A process for producing an antigenic composition, the antigenic composition comprising a dust mite allergen, wherein the dust mite allergen is prepared by a process comprising the steps of:

(a) constructing a vector for plant transformation that comprises a DNA sequence encoding the dust mite allergen operably linked to a plant-specific promoter;

(b) transforming a plant cell or tissue with the vector of step (a); and

25 (c) obtaining the dust mite allergen from the plant cell or tissue of step (b).

16. The process of Claim 15, wherein the dust mite allergen is selected from the group consisting of Der p 5 and Der p 2 allergens.

17. The process of Claim 15, wherein the dust mite allergen is Der p 5 allergen.

5 18. The process of Claim 15, wherein the dust mite further comprises an endoplasmic reticulum (ER) retention signal peptide.

19. The process of Claim 15, wherein the vector is modified plant virus vector.

10 20. The process of Claim 19, wherein the vector is selected from the group consisting of Zucchini yellow mosaic virus (ZYMV) and Tobacco mosaic virus (TMV).

21. The process of Claim 15, wherein the plant-specific promoter is cauliflower mosaic virus 35S promoter.

15 22. The process of Claim 15, wherein the vector further comprises a selectable marker gene.

23. The process of Claim 15, wherein at least one portion of the plant is edible.

20 24. The process of Claim 15, wherein the plant is selected from the group consisting of tobacco, potato and zucchini squash, tomato, lettuce, white grape, banana, rice, radish, carrot, apple, soybean, corn, and berries.

25 25. The process of Claim 24, wherein the plant is selected from the group consisting of Kennebec variety of potato, *Nicotina benthamiana* and *Cucurbia pepo* L. var. Zucchini.

26. The process of Claim 15, wherein the plant cell or tissue is transformed in step (b) by Agrobacterium-mediated gene transferring, direct DNA uptaking or plant virus infecting.

27. The process of Claim 15 further comprising a step of regenerating a transgenic plant from the plant all or tissue of step (b) before step (c).

5 28. The process of Claim 15, wherein the dust mite allergen is provided in the form of the transgenic plant itself, a part of the plant, fruit, leaves, stems, tubers, seed or extract thereof.

29. An antigenic composition comprising unpurified or partial purified recombinant dust mite allergen expressed in a plant at a level sufficient to induce an immunogenic response .

10 30. The composition of Claim 29, wherein the dust mite allergen is selected from the group consisting of Der p 5 and Der p 2allergens.

31. The composition of Claim 29, wherein the dust mite allergen is Der p 5 allergen.

15 32. The composition of Claim 29, wherein the plant is selected from the group consisting of tobacco, potato and zucchini squash, tomato, lettuce, white grape, banana, rice, radish, carrot, apple, soybean, corn, and berries.

20 33. The composition of Claim 32, wherein the plant is selected from the group consisting of Kennebec variety of potato, *Nicotina benthamiana* and *Cucurbia pepo* L. var. *Zucchini*.

34. The composition of Claim 29, which is for oral administration .